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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,659	08/16/2006	Horst Binder	294826US0PCT	9973
22850 7590 04/06/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER LEONARD, MICHAEL L.				
ART UNIT 1796		PAPER NUMBER		
NOTIFICATION DATE 04/06/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/589,659

Applicant(s)

BINDER ET AL.

Examiner

MICHAEL LEONARD

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

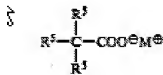
1. Applicant's arguments, see Applicant Arguments/Remarks, filed on 01/28/2009, with respect to the rejection(s) of claim(s) 1-6, and 12 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,540,781 to *Barsa* in view of U.S. Patent No. 4,040,992 to *Bechara et al.* and claims 7-10 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,540,781 to *Barsa* in view of U.S. Patent No. 4,040,992 to *Bechara et al.* as applied to claims 1-6, 11, and 12 above, and further in view of U.S. Patent No. 5,489,663 to *Brandt et al.* have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the above patents.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,540,781 to *Barsa* in view of U.S. Patent No. 4,040,992 to *Bechara et al.*

As to claims 1 and 2, *Barsa* discloses a method for the trimerization of an (cyclo) aliphatic or aromatic organic isocyanate (Column 7, lines 34-40) in the presence of a catalyst comprising carboxylic acid salt of the formula:



Wherein R^5 is independently selected from alkyl or aryl groups, and M is a quaternary ammonium cation having the formula $+\text{N}(\text{R}^6)_4$ wherein each one of the four R^6 radicals is independently selected from alkyl, aralkyl, and cycloalkyl groups (Column 2 lines 15-22) of from 2 to 18 carbon atoms (Column 2, lines 38-60).

As to claims 3-5, Barsa further discloses the term "alkyl" to mean methyl, ethyl, propyl, butyl, isopropyl, and isobutyl (Column 2, lines 38-40), and the term "aryl" to include phenyl and the like (Column 2, lines 57-59). Barsa further discloses wherein the ammonium ion includes trimethylbenzyl ammonium and tetramethylbenzyl ammonium (Column 4, lines 55-60).

As to claims 12 and 13, Barsa discloses a process of making the polyisocyanates that are useful for the preparation of molded solid cast elastomers, elastoplastics, and the like. Such products find utility as car bumpers, body elements, panels, doors, engine hoods, skirts, and air scoops. The good high resistance temperature makes them suitable where higher than normal temperature resistance is required (Column 8, lines 5-15).

Barsa fails to disclose acid with α -hydroxy carboxylate ions.

As to claim 6, Bechara et al. discloses a large variety of carboxylic acids that can be employed to furnish the anion of the desired quaternary ammonium salt. Among these compounds are short to long chain fatty acids, substituted aliphatic acids, and

Aromatic acids with particular reference given to acetic acid, hexanoic acid, and neo acids such as 3,3-dimethyl butanoic acid (Column 4, lines 17-30). Bechara further discloses the use of glycolic acid to form an α -hydroxy carboxylate ion of the formula shown in Example 10, Column 9, and line 30.

Barsa and Bechara are analogous art because they are from the same field of endeavor with respect to using quaternary ammonium salts of carboxylic acids as catalysts for the production of isocyanurate-containing polyisocyanates.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the carboxylic acids mentioned by Bechara to make the quaternary ammonium salt ions disclosed in Barsa because both are using the salt ions as catalyst for the production of isocyanurate-containing polyisocyanates and both mention carboxylic acid ions in combination with ammonium salts. It would have been obvious to use the α -hydroxy carboxylate ion from Bechara because the catalysts would be more compatible with the components employed in premixes and for formulations for polyisocyanurate and polyurethane resins and because of the surface active properties of these catalysts and the lowered viscosity (Bechara, Column 17, lines 36-42). Barsa discloses that prior art catalysts are not thermally active and the catalysts of his invention can be premixed with isocyanates at ambient temperature, in the absence of heat, which corresponds to catalysts having lower viscosities. Also, Bechara further discloses non-alpha hydroxy carboxylate ions similar to Barsa that may be used in the production of isocyanurate isocyanates (Example 7, Column 5). As a result, Bechara has established a functional equivalency between alpha and non-alpha hydroxy

carboxylate ions useful in the production of isocyanurate isocyanates. It would have been obvious to a person of ordinary skill in the art to use both alpha and non-alpha hydroxy carboxylate ions in the formation of isocyanurate isocyanates as disclosed by Barsa.

2. Claims 7-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,540,781 to *Barsa* in view of U.S. Patent No. 4,040,992 to *Bechara et al.* as applied to claims 1-6, 11, and 12 above, and further in view of U.S. Patent No. 5,489,663 to *Brandt et al.*

Barsa and Bechara do not expressly disclose deactivating the catalyst with dibutyl-phosphate or di(2-ethylhexyl) phosphate or where the diisocyanate have a low chlorine content and is chosen from hexamethylene 1,6 diisocyanate or 1-isocyanato-3-isocyanato-3,5,5-trimethylcyclohexane.

Brandt discloses after reaching the desired degree of trimerization, the trimerization reaction is deactivated by di (2-ethylhexyl) phosphate or dibutyl phosphate (Column 5, lines 39-55). Brandt further discloses that isocyanates be from a group comprising 1,6-hexamethylenediisocyanate or 1-isocyanato-3-isocyanato-3,5,5-trimethylcyclohexane and the isocyanates used can be prepared by any processes including phosgenation and phosgene-free of the corresponding diamines (Column 6, lines 45-55). Cyclo-aliphatic diisocyanates prepared by phosgene-free processes do not contain chlorine compounds as byproducts (Column 6, lines 56-59).

Barsa and Brandt are analogous art because they are from the same field of endeavor with respect to using quaternary ammonium salts of carboxylic acids as catalysts for the production of isocyanurate-containing polyisocyanate.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to deactivate the catalyst system used by Barsa in order to create a polyisocyanate containing isocyanurate. It would have been obvious to use to phosgene-free process to prepare the diisocyanates used by Barsa because the trimerization catalysts would have had a significantly higher catalytic activity (Brandt, Column 6, lines 61-64).

As to claim 13, Brandt discloses polyisocyanates containing isocyanurate groups prepared by this process are useful for preparing polyurethane coatings, for polyurethane dispersions, and adhesives and can be used as polyisocyanate components in two components polyurethane systems for high-performance, weather-resistant polyurethane finishes (Column 7, lines 10-15).

3. The examiner notes that claim 11 has been withdrawn and claim 12 has been amended and claim 13 has been added.

Conclusion

The examiner is applying references in a manner that is not strictly triggered by applicant's amendment only; therefore, the present action is made **NON-FINAL**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LEONARD whose telephone number is (571)270-7450. The examiner can normally be reached on Mon-Fri 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL LEONARD/
Examiner, Art Unit 1796